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ABSTRACT

This booklet is designed to assist local educators in designing and implementing approaches to cooperation between secondary and postsecondary schools. It provides information on how secondary and postsecondary educational institutions can coordinate curricula, reduce duplication and costs, and provide optimal occupational training for students in public schools. The Virginia 2+2 model is described and development procedures for programs are listed. Three model programs--the master technician program on the Virginia Peninsula; the engineering design technician program in the Lynchburg area; and the information processing specialist program in the Winchester area--are described. Crucial factors for success with 2+2 programs are identified, the benefits of such programs are listed, and a model organizational chart for 2+2 programs is included. The booklet concludes with a description of current articulation activities in the areas of programming, staff development, and procedures. In addition, names, addresses, and telephone numbers for 17 articulation contact persons in Virginia are provided. (CML)

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Articulation in Virginia

Coordination of Secondary/ Postsecondary Education

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Commonwealth of Virginia
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Richmond, Virginia 23216-2060

1988

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ARTICULATION IN VIRGINIA

COORDINATION OF SECONDARY/ POSTSECONDARY EDUCATION

Commonwealth of Virginia
Department of Education
Vocational and Adult Education
Richmond, Virginia 23216-2060

1988

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ACKNOWLEDGMENTS

Articulation in Virginia: Coordination of Secondary/Postsecondary Education is published in response to an overwhelming demand for information concerning ways secondary and postsecondary educational institutions can coordinate curricula, reduce duplication and costs, and provide optimal occupational training for students in public schools. Because Virginia has a long history of articulation activity and a comprehensive plan for accelerating coordination efforts, it is hoped that this booklet will assist local educators in Virginia and across the nation in designing and implementing even more approaches to cooperation between secondary and postsecondary schools.

Dr. Kay B. Brown, Supervisor of Vocational Curriculum Development, Virginia Department of Education, coordinated the final publication process. The manuscript was prepared for publication by the Virginia Vocational Curriculum and Resource Center, administered by the Henrico County Public

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THE ARTICULATION CHALLENGE

Cooperation between secondary and postsecondary schools is becoming a principal means of providing high-quality, low-cost vocational education in Virginia. Usually designated broadly as "articulation," a wide variety of coordinated, cooperative efforts are being developed and implemented to improve the quality of vocational education for Virginia's students. The goals of articulation are (1) to produce more highly skilled and flexible workers who can meet the technologically sophisticated requirements of modern business, industry, and government, and (2) to check the rising costs at all levels of education and thus ease the burden of state taxpayers.

The following definition of articulation is the starting point for coordination efforts in Virginia:

> Articulation is a planned process within an educational system that coordinates instructional programs in such a way that students can move from one instructional level to another, or from one institution to another, without unnecessary duplication or gaps in the instructional process.

Coordination activities between secondary and post-secondary levels in Virginia, however, transcend this definition and include many variations on the common theme. Articulation arrangements vary from the simple to the highly complex, as the following list indicates:

* Fully coordinated programs and courses
* "2+2" programs in Master Technician, Engineering Design Technician, and Information Processing Specialist and development of nine additional "2+2" programs
* "2+2+2" model to include a third instructional level of vocational training
* Agreements to share facilities and equipment
* Agreements for advanced placement credit
* Provisions for dual enrollments
* Exploration of secondary/postsecondary teaching exchanges
* Exploration of granting secondary credit for postsecondary work for students who did not complete high school.

Obviously, a major part of Virginia's success with articulation efforts stems directly from a willingness to explore and experiment with all legitimate avenues of secondary/postsecondary cooperation. Successful articulation requires a comprehensive approach and a high degree of flexibility.

A History of Cooperation

Current activities continue a long history of cooperation between the Virginia Department of Education and the Virginia Community College System, and the two agencies are expanding partnership activities to support articulation at all educational levels. Soon after the Virginia Community College System was formed in 1966, the new community colleges and local school divisions began constructing formal and informal cooperative agreements involving shared facilities and equipment and advanced placement credit for students. In 1970-71, the Chancellor of the Virginia Community College System and the State Superintendent of Public Instruction issued a joint statement supporting the concept of articulation.

During the 1970s and early 1980s, Virginia funded a number of research projects throughout the state to develop coordinated curriculum materials and to ensure formal cooperative agreements between community colleges and local school districts offering similar programs. Minigrants from 1983 to 1987 stimulated articulation agreements in new program areas.

In 1986, a four-member vocational-technical education committee was formed with two members from the Virginia Board of Education and two from the State Board for Community Colleges. The joint committee continues to oversee the development and implementation of Virginia's comprehensive articulation plan and advises the two boards on matters of mutual interest concerning vocational-technical education.

As a result of the work of the past two decades, Virginia now boasts formal articulation agreements involving 61 vocational-technical disciplines. The agreements, including Virginia's three showcase "2+2" model programs, extend to all 23 community colleges in the system and their local secondary school districts.

THE VIRGINIA "2+2" MODEL

Virginia's major contribution to instructional coordination in vocational-technical education is its creation of the "2+2" model for comprehensive articulation. Far more detailed than more routine approaches, the "2+2" plan has become a national model for excellence in program design and can be modified to meet the varied requirements of specific localities and occupations.

The "2+2" plan arose from the increasing demands of business and industry for professionally trained workers who possess the skills and flexibility required by new and emerging advanced-technology occupations. Traditionally, secondary vocational programs have prepared students for immediate employment in specific occupations and will continue to do so in many areas. Increasing complexities and worker requirements for advanced-technology occupations, however, necessitate more preparation than two years of secondary training alone can provide. The "2+2" approach successfully accommodates the more complex demands.

Basically, "2+2" programs consist of two years of secondary instruction followed by two years of postsecondary instruction, normally at a community college. Secondary training is carefully coordinated with postsecondary training to develop the complex competencies required by advanced technology and to ensure a training continuum where students do not have to repeat learning and curriculum does not overlap. Vital to the "2+2" plan is the active participation of business, industry, and government. Representatives from these groups are involved in every aspect of the program, especially in the development and validation of program content.

The concept of multiple partnerships is also essential to the "2+2" plan. "2+2" requires collaboration between education and business, industry, and government; vocational and academic education; secondary and postsecondary education; and field experts and instructional personnel. Ideally, a "2+2" program involves the entire occupational community it serves.

Development Procedures for Virginia's "2+2" Programs

Development of "2+2" programs in Virginia is systematic:

* Funding to localities is provided by the Commonwealth.
* A project director and a steering committee are appointed to plan, implement, and evaluate the program.
* An advisory committee of representatives from business, industry, and government is formed to work with the project director and steering committee.
* Occupations covered by the program are defined, and occupational surveys are conducted.
* Occupational forecasts are validated by representatives of business, industry, and government.
* Curriculum is prepared and coordinated by project writing teams, including instructors and experts in the field.
* Curriculum is validated by representatives of business, industry, and government.
* The program is implemented and widely publicized throughout the area it serves.
* All program components undergo thorough evaluation and, where necessary, modification.

Once a locality receives funding from the state for a "2+2" program, it follows a series of procedures for the three major phases of activity. The procedures, outlined here, may assist localities inside or outside Virginia in creating additional "2+2" opportunities.

I. Planning and Development

A. Develop administrative procedures and project organization. (See model organizational chart on p. 15.)

B. Conduct occupational research in collaboration with business, industry, and government.

C. Develop curriculum frameworks for secondary and postsecondary components of the program.

D. Incorporate tasks/competencies identified from occupational research into existing secondary and postsecondary programs and courses.

E. Prepare a public information program, using audiovisual and other public relations media.

II. Implementation

A. Develop implementation procedures.

B. Develop or modify curriculum materials as necessary.

C. Identify required in-service education and resources available for the effort.

D. Prepare evaluation criteria, procedures, and instruments.

III. Evaluation

A. Evaluate all aspects of the program.

B. Develop new program materials and procedures, or modify existing ones as necessary.

Careful planning, state sponsorship, and countless hours of dedicated service on the part of local project teams have resulted in three model "2+2" programs in Virginia, which are presented in the brief overview that follows. The Master Technician program on the Virginia Peninsula was the first of the three models, followed by the Engineering Design Technician program in the Lynchburg area and the Information Processing Specialist program in the Winchester area.

"2+2" = Master Technician

Prepares:	Master technicians
Representative Occupations:	Automated manufacturing Biomedics Computer maintenance Electromechanics Electronics Environmental equipment repair Fiber optics Fluid power Instrumentation controls

"2+2" = Master Technician (continued)

Representative Occupations (continued)	Lasers Robotics Systems analysis Telecommunications
Participants:	Thomas Nelson Community College Hampton City Schools New Horizons Technical Center Newport News City Schools Poquoson City Schools Williamsburg-James City County Schools York County Schools

"2+2" = Engineering Design Technician

Prepares:	Engineering design technicians
Representative Occupations:	Architectural design Civil design Engineering Laboratory technology Manufacturing processes Mechanical design Urban planning
Participants:	Central Virginia Community College Altavista City Schools Amherst County Schools Appomattox County Schools Bedford County Schools Campbell County Schools Lynchburg City Schools

"2+2" = Information Processing Specialist

Prepares:	Computer information systems specialists
Representative Occupations:	Computer systems analysis Data processing management Data processing/accounting clerical occupations
Participants:	Lord Fairfax Community College Clarke County Schools Frederick County Schools Winchester City Schools

Crucial Factors for Success with "2+2" Programs

Participants in "2+2" programs have identified several factors that determine the success or failure of cooperative educational efforts. Local planning must entail methods to secure the following components:

* Strong leadership, encouragement, and financial and technical support from state-level agencies
* Adequate planning time, at least one full year for "2+2" program development
* Firm commitment to participate in all program components from representatives of business, industry, and government in the project locality

Crucial Factors for Success with "2+2" Programs (continued)

* Use of business/industry/government representatives in management of "2+2" programs, not just in an advisory capacity

* Widest possible participation among the secondary schools in the service region of the community college

* Detailed, written, and signed articulation agreements uniting all participating educational agencies

* Frequent, periodic evaluation and necessary revision of all program components

* Comprehensive marketing strategy

* Aggressive and dynamic public relations

* Development of total community involvement

* Complete orientation and continuing in-service training for participants

* Total cooperation of secondary and postsecondary faculty and field experts in determining course content

* Development and coordination of procedures for documenting student competencies between secondary and postsecondary institutions.

Benefits of "2+2" Programs

Once the crucial factors are provided for and "2+2" programs are instituted in the locality, the benefits of the programs are extensive, as the following list indicates:

* Combined resources from vocational, technical, and academic areas
* Well defined implementation process
* Adaptability to a wide variety of localities and vocational disciplines
* Time and cost effectiveness through streamlined educational programs
* Expansion to include multiple levels of articulation, including participation of four-year senior institutions
* Elimination of curriculum duplication
* Full support and cooperation of the Virginia Department of Education and the Virginia Community College System
* Active participation of business, industry, and government in program management rather than service in a merely advisory capacity
* Community spirit of cooperation
* Satisfaction for students, parents, educators, employers, and the community
* Economic benefits to the localities and the state through educational coordination resulting in decreased costs
* Opportunities for students to enter, exit, and re-enter education at various points on the training continuum

Benefits of "2+2" Programs (continued)

* Competency-based instruction that combines the best of hands-on training and theoretical background necessary for workers in advanced technology occupations

* Strengthened vocational and academic skills through a coordinated curriculum that develops both general and occupational competencies

* Strong foundation for further education

* Flexibility for changing occupations

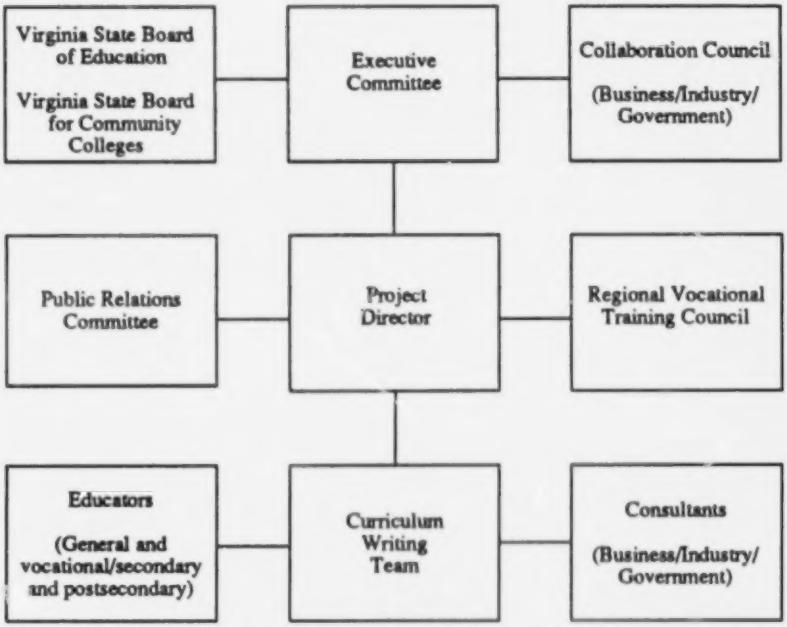
* Broader career choices for students

* Focused job training, placement, and advancement

* Increased earnings and economic self-sufficiency for participants through state-of-the-art training for high demand occupations

* Economic self-sufficiency for participants.

MODEL ORGANIZATIONAL CHART FOR "2 + 2" PROGRAMS



(Adapted from the organizational chart designed for the "2 + 2" = Master Technician program on the Virginia Peninsula)

THE CONTINUING AGENDA

The significant progress to date toward full vocational-technical articulation in Virginia has been primarily a "grass roots" effort, with seed money coming from the state to the localities to develop and implement cooperative arrangements. Now, however, Virginia is embarking on a new, statewide approach to ensure that all applicable vocational programs are coordinated. This movement toward comprehensive articulation has the full support of the Virginia Board of Education and the State Board for Community Colleges. This initiative will result in new levels of instructional sophistication and renewed cooperation between the public schools and the community colleges.

The Virginia Department of Education and the Virginia Community College System are committed to build upon the strong foundation of existing articulation efforts in a new dedication to coordinate all appropriate vocational-technical programs not yet articulated. The comprehensive initiative in Virginia is based on six fundamental guidelines:

* Benefits to students will take precedence over benefits to agencies.

* Students will not be required to learn what they already know.

* There will be no disincentives for articulation.

* New initiatives will not disrupt existing articulation agreements.

* Articulation planning will be comprehensive.

* The Virginia Department of Education and the Virginia Community College System will provide strong leadership for the comprehensive initiative.

Current articulation activities focus on three major areas: programming, staff development, and procedures.

Programming

* Surveys are being conducted in all community colleges to identify existing articulation agreements and to determine other programs to be articulated.

* "2+2" programs will be increased from three to nine by 1990. The "2+2+2" model will expand coordination efforts to incorporate three levels of articulation and involve the participation of local secondary schools, a community college, and a four-year institution.

* A "2+2+2" model will be developed and implemented by 1990.

Programming (continued)

* Major program area projects include preparation of articulation models for eight vocational programs widely offered in Virginia's secondary schools and community colleges. The eight identified programs are accounting, automotive technology, business management, data processing, drafting/design, marketing, electronics, and office systems technology.

* A feasibility study will explore development of a system of dual enrollments between secondary schools and community colleges and will include academic as well as vocational education students.

Staff Development

* Annual staff development meetings on vocational education will include professional personnel from secondary and postsecondary institutions.

* Four regional in-service faculty workshops will update technical faculty on articulation matters.

* A joint seminar on economic development will bring together vocational administrators from secondary and postsecondary schools.

* A provision for joint training for beginning secondary and postsecondary vocational administrators will be included in the State Plan for Vocational Education.

Staff Development (continued)

* Annual articulation workshops will be conducted so that individual articulation project teams can review agreements, curriculum, and other pertinent information for continuation or revision.

Procedures

* The Virginia Department of Education and the Virginia Community College System will review policies and procedures of both systems and modify whatever is necessary to facilitate development of articulation agreements and to ensure consistent application.

* Representatives of the Virginia Department of Education and the Virginia Community College System will work jointly to develop appropriate forums for publicizing all articulation initiatives.

Virginia's goal is complete articulation of vocational-technical education in the Commonwealth, its determination is strong, and officials of both agencies are ready to provide all the support necessary to complete the initiative.

ARTICULATION CONTACT PERSONS IN VIRGINIA

The key figures listed here will be pleased to supply more detailed information about specific articulation activities in Virginia.

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ARTICULATION CONTACT PERSONS IN VIRGINIA (continued)

"2+2" = Master Technician Program (continued)

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ARTICULATION CONTACT PERSONS IN VIRGINIA (continued)

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